

ABSTRACT OF THE DISCLOSURE

A disk array device selects a redundant generation method for reducing the overhead and improving the reliability associated with generating redundant data. The disk array device includes a disk controller connected to and controlling an array of disk drives. The disk controller includes a redundant data generator, a difference data generator, and a redundant data generation method selector. The redundant data generator is able to generate redundant data via a read and modify method and an all stripes method. The disk array device selects a method of generating redundant data from a method of read and modify and all stripes, and a method of generation in a drive and a method of difference, both of which are executed to generate redundant data on a disk drive. The disk array device selects the method of generating redundant data that will minimize the time required to process, transfer and store both the received host data and the generated redundant data based on the length of write data received from the host, an access pattern specified by the host, by the current load state of the disk drives, and by the existence of a failure state in a disk drive. Divided write data and previous data to be updated may be transferred depending on the write data length.